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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/588,476	05/09/2007	Andre Peter Steynberg	U 016430-9	6718
140	7590	04/28/2009		
LADAS & PARRY LLP 26 WEST 61ST STREET NEW YORK, NY 10023			EXAMINER VALENROD, YEVGENY	
			ART UNIT 1621	PAPER NUMBER
			MAIL DATE 04/28/2009	DELIVERY MODE PAPER

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

### Office Action Summary

**Application No.**

10/588,476

**Applicant(s)**

STEYNBERG, ANDRE PETER

**Examiner**

YEVEGENY VALENROD

**Art Unit**

1621

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 25 November 2008.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-10 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-10 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 04 August 2006 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-8508)
- 4) ☐ Interview Summary (PTO-413)
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: \_\_\_\_\_
- Paper No(s)/Mail Date \_\_\_\_\_

### **DETAILED ACTION**

The following is a final office action in application # 10/588,476.

Amendment to the claims filed 11/25/08 is acknowledged.

Applicants remarks filed 11/25/08 have been fully considered but found insufficient to overcome the rejection of record. The remarks are addressed following the text of the rejection.

*Text of the rejection has been modified to account for the additional limitation added to claim 1.*

### ***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 1-10 are rejected under 35 U.S.C. 103(a) as being unpatentable over Gersmann et al. (GB 2 092 172 A) in view of Espinoza et al. (US 6,653,357), Janda et al. (WO 02/26676 A2), Janda et al (US 6,486,219; from here on Janda-2) and Ullmanns Encyclopedia of Industrial Chemistry 6th edition pages 651-660.

#### ***Scope of prior art***

Gersmann et al disclose a process for the preparation of dimethyl ether (DME) from gaseous feedstock comprising hydrogen, carbon monoxide and carbon dioxide in the

first stage (page 2, lines 34-46). DME is separated and the gaseous product of the first stage comprising hydrogen and carbon monoxide is fed to a second stage Fischer-Tropsch reaction to produce hydrocarbons (page 2, lines 47-54). On page 6, lines 34-37, Gersmann et al describe a third embodiment of their invention where light olefins and/or aromatic hydrocarbons are produced in the process (limitation of claims 3, 7).

*Ascertaining the difference between instant claims and prior art*

Gersmann et al fail to teach:

- 1) Recycling of the tail gas from the DME syntheses stage.
- 2) Syngas number between 1.85 and 2.15.
- 3) High temperature two-phase Fischer-Tropsch stage.
- 4) Syngas number for the syngas entering the Fischer-Tropsch stage.

*Secondary references*

A) Janda et al. (WO 02/26676 A2) teach a preferred syngas number for methanol syntheses (which is a precursor to DME syntheses) from 1.8 to 2.2 (page 3, lines 21-23) which comprises the instantly claimed 1.85 to 2.15.

B) Espinoza et al. (US 6,653,357 B1) teach high temperature two-phase Fischer-Tropsch reaction (column 1, lines 30-42).

C) Ullmanns Encyclopedia of industrial Chemistry, 6<sup>th</sup> ed. On page 659, chapter 2.2.4 and page 660, figure 6, teaches various methods of refining the crude product from Fischer-Tropsch. Also on page 651, right column lines 25-26, teach that Naphtha is an ideal feedstock for cracking to olefin.

*D) In the US patent (Janda-2) Janda teaches that the syngas from the methanol syntheses stage is used in the hydrocarbon synthesis stage (column 4, line 63 – column 5 line 1)..*

#### *Obviousness*

One skilled in the art would have found is obvious to perform the process of Gersmann et al. using preferred embodiments known in the art. The syngas number is obvious because Janda et al recommend the 1.8 to 2.2 range as a preferred range for methanol syntheses. *Janda-2 teaches that the syngas from methanol syntheses can be utilized in the hydrocarbon syntheses stage (column 4, lines 63- column 5 line 1) . Since the syngas is the same, the syngas number would also be the same. Janda-2 also teaches recycling of the tail gas from the methanol syntheses (column 4, lines 43-48).* Forming various products from Fischer-Tropsch reaction via known reforming steps is obvious because Ulmanns Encyclopedia teaches the products and which techniques are used to prepare them.

#### *Reply to applicant's remarks*

Applicant has traversed the rejection of record.

Applicant has argued the following:

1) Gersmann fail to teach 1.85 - 2.15 syngas number.

*While Gersmann do not recite the syngas number for their process, one skilled in the art would find it obvious to use the preferred syngas number as described by Janda et al.*

2) Gersmann et al do not make use of high temperature two-phase Fischer-Tropsch reaction.

*While Gersmann do not utilize the instantly claims Fischer-Tropsch reaction, such reaction is known. One skilled in the art would find it obvious to use any known Fischer-Tropsch method in order to obtain hydrocarbons. On page 2, lines 8-11, Gersmann et al teach that the unconverted syngas from the first reaction can be used in the hydrocarbon syntheses stage. One skilled in the art would be motivated to use a hydrocarbon syntheses process that utilizes syngas, which is exactly the type of process Janda et al provide. Examiner does not believe that Gersmann et al teach away from high temperature Fischer-Tropsch. Various methods of performing Fischer-Tropsch are known and one skilled in the arts would find it obvious to choose any known method.*

3) Applicant has argued that Espinoza does not teach the syngas number for high temperature Fischer-Tropsch reaction.

*While applicant is correct in that Espinosa is lacking the teaching of syngas number for the process, when Espinosas process is combined with Gersmann and Janda it is obvious to use the syngas that is unreacted in the DME syntheses stage. The obviousness is based on the fact that both Gesmann and Janda teach using the syngas from the first stage for the hydrocarbon syntheses stage. Espinosa merely provides a known method of performing Fischer-Tropsch which is the same method as claimed by the applicant.*

4) Applicant has argued that there is no motivation or expectation of success in combining the references that are relied upon for the rejection of record.

*Examiner respectfully disagrees. The references used in the instant rejection indicate that all of the elements of the instant invention have been disclosed to the public. The motivation to combine the references is present because the preferred embodiments of the references are utilized in the applicants' invention. For example, it is obvious to use the claimed syngas number for DME syntheses because this number is recommended by Janda. And it is obvious to use high temperature Fischer-Tropsch because it provides a method for controlling the selectivity of the products.*

### **Conclusion**

Claims 1-10 are pending

Claims 1-10 are rejected

**THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of

the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Yevgeny Valenrod whose telephone number is 571-272-9049. The examiner can normally be reached on 8:30am-5:00pm M-F.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Daniel Sullivan can be reached on 571-272-0779. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Yevgeny Valenrod/

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Application/Control Number: 10/588,476  
Art Unit: 1621

Page 8